

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
6 September 2002 (06.09.2002)

PCT

(10) International Publication Number
WO 02/069523 A1

(51) International Patent Classification: H04B 7/10, H04L 1/02

(74) Agent: COOLEY GODWARD LLP; Attn: Patent Group, One Freedom Square - Reston Town Center, 11951 Freedom Drive, Reston, VA 20190-5601 (US).

(21) International Application Number: PCT/US02/05650

(22) International Filing Date: 26 February 2002 (26.02.2002)

(25) Filing Language: English

(26) Publication Language: English

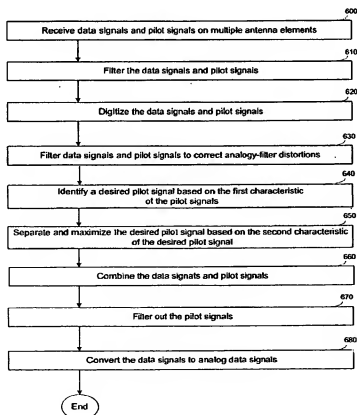
(30) Priority Data:
60/270,895 26 February 2001 (26.02.2001) US
60/286,047 25 April 2001 (25.04.2001) US(71) Applicant: MAGNOLIA BROADBAND, INC [US/US];
64 Old Highway 22, Clinton, NJ 08809 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent

[Continued on next page]

(54) Title: SMART ANTENNA BASED SPECTRUM MULTIPLEXING USING A PILOT SIGNAL



(57) Abstract: A system and method for using a pilot signal in a communication receiver having multiple antenna elements is described. A set of data signals and a set of pilot signals are received (600). A first pilot signal from the set of pilot signals is identified based on a first characteristic of the first pilot signal from the set of pilot signals (640). A set of weight values associated with the antenna elements are adjusted so that a second characteristic of the first pilot signal is substantially optimized with respect to the second characteristic of the remaining pilot signals from the set of pilot signals (650). Consequently, a first data signal from the set of data signals and being uniquely associated with the first pilot signal is substantially optimized by the adjusting of the set of weight values associated with the antenna elements.

WO 02/069523 A1